Complete Summary

GUIDELINE TITLE

Knee & leg (acute & chronic).

BIBLIOGRAPHIC SOURCE(S)

Work Loss Data Institute. Knee & leg (acute & chronic). Corpus Christi (TX): Work Loss Data Institute; 2007 Jul 5. 231 p. [231 references]

GUIDELINE STATUS

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory information has been released.

- June 15, 2005, Non-Steroidal Anti-Inflammatory Drugs (NSAIDs): U.S. Food and Drug Administration (FDA) recommended proposed labeling for both the prescription and over the counter (OTC) NSAIDs and a medication guide for the entire class of prescription products.
- April 7, 2005, Non-steroidal anti-inflammatory drugs (NSAIDS) (prescription and OTC, including ibuprofen and naproxen): FDA asked manufacturers of prescription and non-prescription (OTC) non-steroidal anti-inflammatory drugs (NSAIDs) to revise their labeling to include more specific information about potential gastrointestinal (GI) and cardiovascular (CV) risks.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Work-related knee and leg disorders

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Orthopedic Surgery
Physical Medicine and Rehabilitation

INTENDED USERS

Advanced Practice Nurses
Health Care Providers
Health Plans
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

To offer evidence-based step-by-step decision protocols for the assessment and treatment of workers' compensation conditions

TARGET POPULATION

Workers with knee and leg ailments

INTERVENTIONS AND PRACTICES CONSIDERED

The following interventions/procedures were considered and recommended as indicated in the original guideline document:

1. Activity restrictions/Work modifications
2. Anterior cruciate ligament (ACL) reconstruction
3. ACL diagnostic tests (pivot shift test of MacIntosh and Lachman test)
4. Acupuncture for osteoarthritis
5. Bone-growth stimulators
6. Cetylated fatty acids (CFA) topical cream
7. Chondroplasty

8. Cold/heat packs
9. Continuous-flow cryotherapy in postoperative setting, only for in-patient use
10. Continuous passive motion (CPM) combined with physical therapy
11. Corticosteroid injections (short-term use only)
12. Diagnostic arthroscopy
13. Diagnostic ultrasound
14. Exercise
15. Glucosamine/Chondroitin
16. Home health services for homebound patients
17. Hyaluronic acid injections (Synvisc, Hyalgan®) for osteoarthritis
18. Knee brace
19. Knee joint replacement
20. KT 1000 arthrometer as an option to the Lachman test
21. Lateral retinacular release
22. Magnetic resonance imaging (MRI)
23. Manual wheelchair
24. MR arthrography for meniscal repair and meniscal resection of more than 25%
25. Massage therapy as an option for osteoarthritis
26. Meniscal allograft transplantation
27. Meniscectomy
28. Occupational and physical therapy
29. Osteochondral autograft transplant system (OATS)
30. Osteotomy
31. Pharmacotherapy (acetaminophen and non-steroidal anti-inflammatory drugs [NSAIDs])
32. Prostheses (artificial limb)
33. Radiography
34. Return to work
35. SAMe (S-adenosylmethionine)
36. Static progressive stretch (SPS) therapy (Dynasplint)
37. Transcutaneous electrical neurostimulation (TENS) plus exercise
38. Ultrasound fracture healing (bone-growth stimulators)
39. Walking aids (canes, crutches, braces, orthoses, and walkers)
40. Work conditioning and work hardening program

The following interventions/procedures are under study and are not specifically recommended:

1. ACL injury rehabilitation
2. Deep transverse friction massage (DTFM)
3. Extracorporeal shock wave therapy (ESWT)
4. Interferential current therapy (IFC) for recovery post knee surgery
5. Lateral pull test and patellar tilt test
6. Microprocessor-controlled knee prostheses
7. Non-surgical intervention for patellofemoral pain syndrome (PFPS)
8. Patient education for knee replacement
9. Posterior cruciate ligament (PCL) repair
10. Post-op ambulatory infusion pumps (local anesthetic)
11. Prolotherapy
12. Pulsed magnetic field therapy (PMFT)
13. Stretching and flexibility training routines

14. Therapeutic knee splint

The following interventions were considered, but are not recommended:

1. Autologous cartilage implantation (ACI)
2. Computer assisted surgery
3. Delayed treatment
4. Electromyographic biofeedback treatment
5. Immobilization as primary treatment
6. Interferential current therapy (IFC) for chronic pain or low back problems
7. Low level laser therapy (LLLT)
8. Magnet therapy
9. Manipulation/chiropractic
10. Mosaicplasty
11. Power mobility devices (PMDs)
12. Single photon emission computed tomography (SPECT)
13. Therapeutic ultrasound

MAJOR OUTCOMES CONSIDERED

Effectiveness of treatment in relieving pain and improving function

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Work Loss Data Institute (WLDI) conducted a comprehensive medical literature review (now ongoing) with preference given to high quality systematic reviews, meta-analyses, and clinical trials published since 1993, plus existing nationally recognized treatment guidelines from the leading specialty societies. WLDI primarily searched MEDLINE and the Cochrane Library. In addition, WLDI also reviewed other relevant treatment guidelines, including those in the National Guideline Clearinghouse, as well as state guidelines and proprietary guidelines maintained in the WLDI guideline library. These guidelines were also used to suggest references or search terms that may otherwise have been missed. In addition, WLDI also searched other databases, including MD Consult, eMedicine, CINAHL, and conference proceedings in occupational health (i.e. American College of Occupational and Environmental medicine [ACOEM]) and disability evaluation (i.e. American Academy of Disability Evaluating Physicians [AADEP], American Board of Independent Medical Examiners [ABIME]). Search terms and questions were diagnosis, treatment, symptom, sign, and/or body-part driven, generated based on new or previously indexed existing evidence, treatment parameters and experience.

In searching the medical literature, answers to the following questions were sought: (1) If the diagnostic criteria for a given condition have changed since

1993, what are the new diagnostic criteria? (2) What occupational exposures or activities are associated causally with the condition? (3) What are the most effective methods and approaches for the early identification and diagnosis of the condition? (4) What historical information, clinical examination findings or ancillary test results (such as laboratory or x-ray studies) are of value in determining whether a condition was caused by the patient's employment? (5) What are the most effective methods and approaches for treating the condition? (6) What are the specific indications, if any, for surgery as a means of treating the condition? (7) What are the relative benefits and harms of the various surgical and non-surgical interventions that may be used to treat the condition? (8) What is the relationship, if any, between a patient's age, gender, socioeconomic status and/or racial or ethnic grouping and specific treatment outcomes for the condition? (9) What instruments or techniques, if any, accurately assess functional limitations in an individual with the condition? (10) What is the natural history of the disorder? (11) Prior to treatment, what are the typical functional limitations for an individual with the condition? (12) Following treatment, what are the typical functional limitations for an individual with the condition? (13) Following treatment, what are the most cost-effective methods for preventing the recurrence of signs or symptoms of the condition, and how does this vary depending upon patient-specific matters such as underlying health problems?

Criteria for Selecting the Evidence

Preference was given to evidence that met the following criteria: (1) The article was written in the English language, and the article had any of the following attributes: (2) It was a systematic review of the relevant medical literature, or (3) The article reported a controlled trial – randomized or controlled, or (4) The article reports a cohort study, whether prospective or retrospective, or (5) The article reports a case control series involving at least 25 subjects, in which the assessment of outcome was determined by a person or entity independent from the persons or institution that performed the intervention the outcome of which is being assessed.

More information about the selection of evidence is available in "Appendix. ODG Treatment in Workers' Comp. Methodology description using the AGREE instrument" (see "Availability of Companion Documents" field).

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Ranking by Type of Evidence

1. Systematic Review/Meta-Analysis

2. Controlled Trial-Randomized (RCT) or Controlled
3. Cohort Study-Prospective or Retrospective
4. Case Control Series
5. Unstructured Review
6. Nationally Recognized Treatment Guideline (from www.guideline.gov)
7. State Treatment Guideline
8. Other Treatment Guideline
9. Textbook
10. Conference Proceedings/Presentation Slides

Ranking by Quality within Type of Evidence

a. High Quality
b. Medium Quality
c. Low Quality

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

The Work Loss Data Institute (WLDI) reviewed each article that was relevant to answering the question at issue, with priority given to those that met the following criteria: (1) The article was written in the English language, and the article had any of the following attributes: (2) It was a systematic review of the relevant medical literature, or (3) The article reported a controlled trial – randomized or controlled, or (4) The article reported a cohort study, whether prospective or retrospective, or (5) The article reported a case control series involving at least 25 subjects, in which the assessment of outcome was determined by a person or entity independent from the persons or institution that performed the intervention the outcome of which is being assessed.

Especially when articles on a specific topic that met the above criteria were limited in number and quality, WLDI also reviewed other articles that did not meet the above criteria, but all evidence was ranked alphanumerically (see the Rating Scheme of the Strength of Evidence field) so that the quality of evidence could be clearly determined when making decisions about what to recommend in the Guidelines. Articles with a Ranking by Type of Evidence of Case Reports and Case Series were not used in the evidence base for the Guidelines. These articles were not included because of their low quality (i.e., they tend to be anecdotal descriptions of what happened with no attempt to control for variables that might effect outcome). Not all the evidence provided by WLDI was eventually listed in the bibliography of the published Guidelines. Only the higher quality references were listed. The criteria for inclusion was a final ranking of 1a to 4b (the original inclusion criteria suggested the methodology subgroup), or if the Ranking by Type of Evidence was 5 to 10, the quality ranking should be an "a."

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

The guideline developers reviewed published cost analyses.

METHOD OF GUIDELINE VALIDATION

External Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Prior to publication, select organizations and individuals making up a cross-section of medical specialties and typical end-users externally reviewed the guideline.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary. The recommendations that follow are based on the previous version of the guideline.

Initial Diagnosis

Knee ailments are among the ten most common causes of reported work-related complaints and workers' compensation claims. Initially, the practitioner should make sure that there are no indications of a potentially serious disease or condition (red flags), the presence of which would require that the patient be referred immediately to a specialist. In the absence of such red flags, the occupational provider can safely manage the healing process.

Initial Evaluation

First visit: with Primary Care Physician MD/DO (100%)

- Check for serious underlying conditions often indicated by deformity or bone crepitation (fractures); displaced patella, tibia, or fibula (dislocation); severe pain with motion; infection; additional pain in the back or hip; excessive swelling; nontender mass (possibly indicating tumor); or neurovascular symptoms such as pale, cold skin; painless swelling; and/or paralysis.
- Determine the incident or incidents that caused the complaint, especially torsion, fixed foot "pop," external lateral force, or forward force with abrupt halt in gait.
- Determine whether the problem is acute, subacute, chronic, or of insidious onset.

- Determine the severity and specific anatomic location of the pain.
- Describe location and severity of pain.
- Assess the ability of the patient to lift and carry weight, from no to full lifting ability.
- Assess the ability to climb stairs and hills and walk on uneven ground.
- Determine any present medication.
- Determine any previous medical history, history of systemic disease, or history of previous knee injury, previous knee surgery, discomfort, or related disability.
- Investigate non-industrial reasons that commonly exacerbate knee complaints (i.e., recreational sports or other exercise that aggravates the knee, degenerative disorders, and past acute injury).
- Compare clinical exam findings of injured knee to opposite knee.

Presumptive Diagnosis

- Observe the patient's walk and stance for abnormalities, including swelling, deformity, discoloration, inability to extend, and difficulty walking.
- Examine the knee in an extended position for tenderness and range of motion.
- Check for ligament stability while applying pressure with the joint slightly flexed.
- Pull the tibia forward to examine the knee at 30 degrees (Lachman test). Problems with both flexion and extension at once could indicate the need for surgery.
- Aspiration can be used on initial atraumatic effusions but only if there is no sign of infection.
- Anterior knee pain, popping and clicking, and possible cartilage loss (shown through magnetic resonance imaging [MRI]) are indicators of patellofemoral syndrome.
- Other anterior knee pains, along with tenderness over the patellar tendon, could be signs of patellar tendonitis.
- Swelling over the tibial tubercle could indicate Osgood-Schlatter disease, a congenital condition (common in adolescents – not work related).
- Prepatellar bursitis and contusion/periostitis could be caused by direct force, prepatellar bursitis by repetitive friction force.
- Unexplained knee pain, semi-locking, catching, and swelling could be patellofemoral instability, which is often mistaken for a ligament injury. Patellofemoral instability is successfully treated with physical therapy.
- Neurologic condition should be assessed, especially in regard to evidence of lumbar disk disease with possible radiation to the knee.
- Immediate referral is recommended for patients with neurologic symptoms, infections, tumor, or deformity.

Initial Therapy

The first step is to reduce pain and make the patient feel comfortable, usually with nonprescription analgesics or prescribed pharmaceuticals if necessary. At-home exercises, such as bicycling and straight leg lifting, or other retraining and weight-bearing activities may aid in rehabilitation, although a physical therapist may be necessary depending on patient motivation and degree of pain. Exercise and

movement have been shown to be more beneficial than total rest, but care must be taken not to overload the knee during weight bearing exercises.

Imaging

If a fracture is considered, patients should have radiographs if the Ottawa criteria are met. Among the 5 decision rules for deciding when to use plain films in knee fractures, the Ottawa knee rules (injury due to trauma and age >55 years, tenderness at the head of the fibula or the patella, inability to bear weight for 4 steps, or inability to flex the knee to 90 degrees) have the strongest supporting evidence. Diagnostic performance of magnetic resonance imaging is recommended for the menisci and cruciate ligaments of the knee.

Surgery

Immediate emergency surgery is usually unnecessary with knee injuries unless there is a need to drain acute effusions. Otherwise, most knee problems are greatly improved with physical methods alone. Only when exercise programs are unable to increase strength and range of motion in the knee after more than a month should surgery be considered, and even then it may not be necessary. Surgery may be considered in the following cases:

- **Anterior Cruciate Ligament (ACL) Tears**: The decision on whether or not to surgically repair an ACL tear should take into account the patient's work and life needs. For those whose life does not include active use or load of the knee, surgery may be unnecessary. The rehabilitation process following surgery involves six months of very intense therapy, so non-surgical recovery should be allowed to occur as much as possible before any surgery takes place. Confirmation of a complete tear in the ligament through MRI findings, clear signs of instability confirmed through the Lachman and pivot test, and a history of frequent falls or giving way are consistent with this condition. See ODG Indications for Surgery -- Anterior cruciate ligament (ACL) repair in the original guideline document.

Official Disability Guidelines (ODG) Return-to-Work Pathways

Severe (tear), Grade III[1], ACL repair, sedentary/modified work: 35 days

Severe (tear), ACL repair, manual/standing work: 180 days

(See *ODG Capabilities & Activity Modifications for Restricted Work* under "Work" in the Procedure Summary in the original guideline document)

[1]**Definition of Sprain/Strain Severity Grade**: In general, a **Grade I** or mild sprain/strain is caused by overstretching or slight tearing of the ligament/muscle/tendon with no instability, and a person with a mild sprain usually experiences minimal pain, swelling, and little or no loss of functional ability. Although the injured muscle is tender and painful, it has normal strength. A **Grade II** sprain/strain is caused by incomplete tearing of the ligament/muscle/tendon and is characterized by bruising, moderate pain, and swelling, and a **Grade III** sprain/strain means complete tear or rupture of a ligament/muscle/tendon. A sprain is a stretch and/or tear of a ligament (a band of fibrous tissue that connects two or more bones at a joint). A strain is an injury to either a muscle or a tendon (fibrous cords of tissue that connect muscle to bone).

- **Collateral Ligament Tears**: Surgery is usually unnecessary; healing often occurs with rehabilitative exercises alone.
- **Meniscus Tears**: Patients with meniscus tears that are not severely limiting or progressive may not need surgical attention. In patients younger than 35, arthroscopic meniscal repair can preserve meniscal function, although the recovery time is longer compared to partial meniscectomy. Arthroscopy and meniscal surgery may not be as beneficial for older patients who are exhibiting signs of degenerative changes, possibly indicating osteoarthritis.

ODG Return-To-Work Pathways

Without surgery, clerical/modified work: 0 to 2 days

Without surgery, manual/standing work: 21 days

With arthroscopy, clerical/modified work: 14 days

With arthroscopy, manual/standing work: 42 days

With arthrotomy, clerical/modified work: 28 days

With arthrotomy, manual/standing work: 56 days

With arthrotomy, heavy manual/standing work: 84 days

- **Osteochondral Defects**: Studies are still being done to test the effectiveness of osteochondral autograft transplant system (OATS) procedures for osteochondral defects. Patients under 40 years old with active lifestyles may benefit from OATS, and the procedure may delay the development of osteoarthritis.
- **Patellofemoral Syndrome (PFS)**: While commonly treated with arthroscopic patellar shaving, this procedure is not proven in terms of long-term improvement. In cases of severe patellar degeneration, surgery is usually not helpful. For patients with rheumatoid conditions, patellectomy and patellar replacements are sometimes performed on active patients. Other possible surgeries for PFS are lateral arthroscopic release and surgical realignment of the extensor mechanism.

ODG Return-To-Work Pathways

Arthroscopy, clerical/modified work: 7 to 10 days

Arthroscopy, manual work: 28 days

Arthroscopy, debridement of cartilage, clerical/modified work: 7 to 14 days

Arthroscopy, debridement of cartilage, manual work: 30 days

Arthrotomy, clerical/modified work: 21 days

Arthrotomy, manual work: 49 days

- **Arthritis**: Therapeutic exercises are beneficial for knee osteoarthritis. Acetaminophen is an effective agent for relief of knee pain. Although safer, it is less effective than nonsteroidal anti-inflammatory drugs (NSAIDs). For safety reasons acetaminophen should be the first line treatment, with NSAIDs reserved for those who do not respond. Glucosamine may provide effective symptomatic relief for patients with osteoarthritis of the knee. In addition, glucosamine has shown promising results in modifying the progression of arthritis over a 3-year period. Glucosamine has a tolerability profile similar to that of placebo and is better tolerated than ibuprofen or piroxicam. Intra-articular (IA) injection of hyaluronic acid (e.g., Synvisc) can decrease symptoms of osteoarthritis of the knee. The short-term benefit of IA corticosteroids in treatment of knee osteoarthritis is well established, and few side effects have been reported. Longer-term benefits have not been confirmed. Total knee arthroplasties are well accepted as reliable and suitable surgical procedures to return patients to function.

ODG Return-To-Work Pathways

Medical treatment: 0 days

Visco injection, knee: 7 days

Partial arthroplasty, knee: 28 days

Arthroplasty, knee, clerical/modified work: 42 days

Arthroplasty, manual work: 84 days

Obesity comorbidity (body mass index [BMI] $\geq$30), multiply by: 1.31

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

During the comprehensive medical literature review, preference was given to high quality systematic reviews, meta-analyses, and clinical trials over the past ten years, plus existing nationally recognized treatment guidelines from the leading specialty societies.

The heart of each Work Loss Data Institute guideline is the Procedure Summary (see the original guideline document), which provides a concise synopsis of effectiveness, if any, of each treatment method based on existing medical evidence. Each summary and subsequent recommendation is hyper-linked into

the studies on which they are based, in abstract form, which have been ranked, highlighted and indexed.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

These guidelines unite evidence-based protocols for medical treatment with normative expectations for disability duration. They also bridge the interests of the many professional groups involved in diagnosing and treating work-related knee ailments.

POTENTIAL HARMS

Meniscectomy is a surgical procedure associated with a high risk of knee osteoarthritis.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The Treatment Planning sections outline the most common pathways to recovery, but there is no single approach that is right for every patient and these protocols do not mention every treatment that may be recommended. See the Procedure Summaries (in the original guideline document) for complete lists of the various options that may be available, along with links to the medical evidence.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Patient Resources

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Work Loss Data Institute. Knee & leg (acute & chronic). Corpus Christi (TX): Work Loss Data Institute; 2007 Jul 5. 231 p. [231 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2003 (revised 2007 Jul 12)

GUIDELINE DEVELOPER(S)

Work Loss Data Institute - Public For Profit Organization

SOURCE(S) OF FUNDING

Not stated

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Editor-in-Chief, Philip L. Denniston, Jr. and Senior Medical Editor, Charles W. Kennedy, MD, together pilot the group of approximately 80 members. See the ODG *Treatment in Workers Comp* Editorial Advisory Board.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

There are no conflicts of interest among the guideline development members.

GUIDELINE STATUS

Note: This guideline has been updated. The National Guideline Clearinghouse (NGC) is working to update this summary.

GUIDELINE AVAILABILITY

Electronic copies of the updated guideline: Available to subscribers from the Work Loss Data Institute Web site.

Print copies: Available from the Work Loss Data Institute, 169 Saxony Road, Suite 210, Encinitas, CA 92024; Phone: 800-488-5548, 760-753-9992, Fax: 760-753-9995; www.worklossdata.com.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Background information on the development of the Official Disability Guidelines of the Work Loss Data Institute is available from the Work Loss Data Institute Web site.
- Appendix. ODG Treatment in Workers' Comp. Methodology description using the AGREE instrument. Available to subscribers from the Work Loss Data Institute Web site.

PATIENT RESOURCES

The following is available:

- Appendix B. ODG Treatment in Workers' Comp. Patient information resources. 2006.

Electronic copies: Available to subscribers from the Work Loss Data Institute Web site.

Print copies: Available from the Work Loss Data Institute, 169 Saxony Road, Suite 210, Encinitas, CA 92024; Phone: 800-488-5548, 760-753-9992, Fax: 760-753-9995; www.worklossdata.com.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC STATUS

This summary was completed by ECRI on February 2, 2004. The information was verified by the guideline developer on February 13, 2004. This NGC summary was updated by ECRI on March 28, 2005, January 12, 2006, November 10, 2006, March 30, 2007, and August 28, 2007.

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